

## **ERRATA to the PRINT VERSION of the EUROPEAN PERINATAL HEALTH REPORT**

- I. **Collaborators to be added to Appendix A1.** We are grateful for their assistance and apologize for the omission.

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### Italy

- In Appendix A1, the name of the Italian institute of statistics should be Istituto Nazionale di Statistica (ISTAT) and not Sociali Istituto Nazionale di Statistica.

- II. **Errors to the data** (now corrected in the current web report). Modified pages of the report follow for insertion into the printed version of the report.

- **Data sources:** Portugal provided data from hospital discharge data systems (p. 30) and included data from the National Registry of Very Low Birthweight Babies (p. 31). On page 31, “UK Northern Ireland: Neonatal Intensive Care Outcomes and Evaluation (NICORE)” should read UK Northern Ireland: Neonatal Intensive Care Outcomes Research and Evaluation (NICORE)
- **Stillbirth registration:** There have been changes to **Figure 7.1 (p. 114)** and **Table 3.1 (p. 40)** on the limits of stillbirth registration for UK: England and Wales (**Fig 7.2 on p. 115 only**) and Portugal (**Fig 7.2 and Table 3.1 on p. 40**). This change for Portugal was also made in the text on **page 33**.
- **Maternal country of origin: Table 4.2 (p. 59).** In Portugal, women with foreign nationality constitute 7.8% of new mothers (not 9.7% based on country of birth).
- **Mode of delivery:** The correct rates for caesarean and instrumental delivery for Ireland are the following: Caesarean section: 25.1%, Instrumental: 15.3%, Vaginal: 59.6%. **Figure 5.1** has been updated and the text has been amended (**pp. 14, 64, 65**). The appendix tables have been amended: **Table C10 (p. 241), Table C10\_A page 242 and Table C10\_D page 245**. Portugal did not provide data on mode of delivery or episiotomy (change to text **page 74 and 89**)
- **Fetal mortality: Figure 7.2 (p. 115).** The proportion of fetal deaths between 32 to 36 weeks should be 24.4%, not 21.4%.
- **Gestational age:** The gestational age data from the Czech Republic were shifted over by one week and the preterm birth rate is overestimated. The rate should be 7.0% and not 12.2%. This change affects text on **page 12** and **page 129** as well as **Figures 7.10 and 7.11 on (pp. 131-132)** and the appendix **tables C5, C5A, C5B and C5C (pp. 231-232)**.
- **Maternal mortality and morbidity:** In **Figure 6.1 (p. 99)**, Hungary and Denmark are mistakenly classified in the group with a maternal mortality ratio of 9.9 per 100 000 live births or over. Hungary's MMR is 7.4 per 100 000 and Denmark's is 9.3 per 100 000. The data in Table 6.1 are correct. **On page 105**, embolism should read embolisation.
- **Congenital anomalies:** The EUROCAT congenital anomalies rates for Malta in **Table 9.3 (p. 171)** are displaced by one cell in the table such that data are not under the right headings. The spina bifida rate for live births for France, fetal deaths and terminations has been corrected from 0.15 to 0.41 per 1000 births.

be higher. This is the case in France where terminations of pregnancy are a principal explanation for the very high fetal death rate (9.1 per 1000 total births).

**The incidence of low birth weight ranges from 5 to 9% of all births and shows a marked geographical pattern.**

The percentage of babies weighing less than 2500 g ranged from 4.2-4.3% of live births in Estonia, Finland, and Sweden to 8.5% in Greece, 8.3% in Hungary, and 7.4% in Spain. A geographical pattern characterised the incidence of low birth weight in Europe, with lower rates in the more northerly countries. Babies may have a low birth weight because of preterm birth or intrauterine growth restriction or for both these reasons. Some of the variation between countries could be due to physiological differences in body size. Very low birthweight babies, weighing less than 1500 g and therefore at the highest risk, accounted for 0.7 to 1.3% of all live births.

**Preterm birth rates vary widely among European countries, ranging from 5.5 to 11.4%.**

The percentage of live births before 37 completed weeks of gestation was highest in Austria (11.4), followed by Germany (8.9) and lowest in Finland (5.6), Latvia (5.7), Lithuania (5.3), and Ireland (5.5). Some of the variation between countries may be due to differences in the way that gestation is determined, and these differences should be explored. The variation in very preterm births, before 32 weeks of gestation, was less pronounced, and rates for most countries fell within a range of 0.9 to 1.1%.

**An estimated 120 000 fetuses and babies had a major congenital anomaly in the EU-25 countries in 2004.**

The overall incidence of major congenital anomalies diagnosed during pregnancy, at birth or in early infancy was 24 per 1000 births in 2004 according to EUROCAT data. This incidence has not decreased in recent decades, and there is a need to improve primary prevention policies reducing environmental risk factors in the pre and periconceptional period. Four fifths of cases were live births, the vast majority of whom survived the neonatal period, and may have special medical, educational or social needs. The largest group of congenital anomalies is congenital heart disease. An overall 0.93 perinatal deaths per 1000 births in 2004 were associated with congenital anomaly. The rate of termination of pregnancy for fetal anomaly (TOPFA) varies widely between countries from none (Ireland, Malta) to 10.7 per 1000 births (France), reflecting differences in prenatal screening policy and uptake, and differences in TOPFA laws, practices, and cultural attitudes. The live birth rate of certain anomalies such as spina bifida and Down Syndrome is inversely related to the TOPFA rate in the country.

**Cerebral palsy registries make it possible to assess the longer term consequences of perinatal complications for the most common motor impairment in childhood.**

Higher survival rates among very low birthweight babies and rising multiple birth rates have increased the proportion of children with cerebral palsy who are born from multiple pregnancies or who are of very low birth weight. For example, between 1980 and 1998 the proportion of very low birthweight babies with cerebral palsy who came from multiple births rose from around 17% to 24%. These increases in the population at risk of developing cerebral palsy have been offset by the decline in the overall prevalence of cerebral palsy among very low birthweight babies, which fell from 60.6 per 1000 live births in 1980 to 39.5 per 1000 in 1996. The significant decline, however, was confined to children with a birth weight between 1000 and 1499 g.

### **The wide diversity of practices in Europe raises questions about the appropriate level of intervention during childbirth.**

Countries separated by only a few hundred kilometres have very different approaches to the management of pregnancy and childbirth. For example:

- Rates of caesarean section ranged from 14% in the Netherlands and 15% in Slovenia to 33% in Portugal and 38% in Italy.
- Instrumental delivery rates ranged from less than 3% of all deliveries in the Czech Republic and the Slovak Republic, and Slovenia to more than 12% in Ireland, Portugal and in the Valencia region of Spain.
- Labour was induced in less than 9% of all deliveries in Lithuania, Estonia, and the Czech Republic and more than 30% in Northern Ireland (UK) and Malta.
- Episiotomy rates ranged from 9.7% of vaginal deliveries in Denmark, 14.2% in Wales (UK), and 16.2% in England (UK) to 82% in Valencia (Spain), 63% in Flanders (Belgium), and 52% in Italy.

Not only do health care professionals in some countries intervene more than those in others in the natural process of childbirth, but there are also substantial differences in the types of intervention used. Greater use of intervention may be associated with higher rates of preterm birth or low birth weight or with characteristics of health care systems. These differences raise questions that should be explored in the future.

### **Diversity within Europe provides opportunities to learn from the differences in cultural and organisational models for maternity and neonatal care.**

The long-standing debate about the risks and benefits of childbirth according to the size of maternity units has not ended. In some countries, deliveries still take place in smaller maternity units, with fewer than 500 deliveries per year. These units deliver 19% or more of all births in Cyprus, Latvia, Lithuania, Estonia, and Germany. Elsewhere these types of structures no longer exist or account for only a small percentage of births, less than 3% in Denmark, Sweden, Ireland, Portugal, and Scotland (UK). In countries in both the north and south of Europe, births are concentrated primarily in very large maternity units. Very large units have been criticised for being impersonal and in some cases have been shown to use more interventions during delivery. Home births are rare almost everywhere, with the prominent exception of the Netherlands, which maintains its unique model of maternity care, with 30% of births taking place at home. In the UK, where home births are offered as an option to women with low risk pregnancies, this percentage ranged from under 1% in Northern Ireland to 3.1% in Wales.

Countries also differ in the models for care adopted for very preterm babies, those born before 32 weeks of gestation. These babies have lower mortality and morbidity when they are delivered in maternity units that have on-site neonatal intensive care. While many European countries have specified the types of specialised units where these babies should be delivered, these specifications and their classifications differ, and the percentage of very preterm babies born in units designated as most specialised ranges very widely – from 26 to 96%.

### **Behaviours promoting fetal and neonatal health differ in Europe**

Smoking during pregnancy can harm the developing fetus and has longer-term consequences for health. Eleven countries could not provide information on the proportion of women who smoked during pregnancy and there were inconsistencies in the data which were provided. Where these data were available, rates ranged from 5-7% in Lithuania, the Czech Republic, Sweden, and Malta to 16% in Denmark and 21% in France. This basic indicator is essential for monitoring the

Many countries have introduced a medical birth register to monitor maternal and perinatal health. Data provision is mandatory in most of the countries, although it was voluntary for four medical birth registers. Midwives, nurses or doctors usually provide information to the registers from the delivery hospitals, either on a data collection form or directly from electronic patient data systems. Seven registers were exclusively hospital-based, while the others included home births. The coverage of medical birth registers is usually high, from 97% to 100%. Data linkage to civil registration (birth and death certificates) makes coverage nearly complete. These registers contain information on the background of parents, especially mothers, on diagnosis, care and interventions during pregnancy and delivery, and on the babies' perinatal health, diagnosis, care, and interventions. The majority of EURO-PERISTAT core and recommended indicators are available in these medical birth registers.

In Italy, a medical birth register (Birth Certificates Register) was in force up to 1998, when it was dismantled following changes in the data protection legislation it was later rebuilt and entrusted to the Ministry of Health, rather than to the National Institute of Statistics as it had been.<sup>4</sup> This caused some organisational problems, and in 2003 the coverage for the new system was still only 84%. These data have been weighted, however, to sum up to the total number of births in Italy that year.

The Netherlands, which has introduced professional-based registers to monitor perinatal health, is a special case. There are four national perinatal registries in the Netherlands, all monitored by the Netherlands Perinatal Registry. It includes the National Perinatal Registry for Primary Care (LVR1), which is a register of midwife-assisted births (home and hospital) and the National Perinatal Registry for Secondary Care (LVR2), which covers obstetrician-assisted births. The National Perinatal Registry, for general practitioner-assisted births (LVR-h) contains only few births completely managed by a general practitioner and is not yet linked with the other databases. Finally, there is a National Neonatal Registry (LNR) for paediatricians and neonatologists, which is merged with LVR1 and LVR2 to create a national perinatal database.

The German medical birth register is chiefly used as a basis for benchmarking individual obstetric units on a range of performance indicators. These indicators are compiled on an annual basis and reflect quality of medical care and obstetric outcome in terms of unit-specific rates. Appropriate follow-up measures are taken when national targets are not met.

### 3.2.3. OTHER DATA COLLECTION SYSTEMS

#### a) Hospital discharge data systems:

Austria, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Hungary, Italy, Poland, Portugal, Spain, and England, Wales, and Scotland in the UK

Most European countries have a hospital discharge system, which also gathers information on all hospital births. It usually has no information on home births, and those that attempt to include them have difficulty capturing them. Some countries also exclude hospital care in private institutions or do not have comprehensive coverage of these institutions. Information on all hospital births and interventions during the hospital stay, for example, caesarean or instrumental deliveries, on maternal diagnoses during pregnancy, birth, and hospital care after delivery, and on interventions and diagnoses before discharge of the babies can be derived from hospital discharge data systems. Diagnostic information usually covers only specialised hospital care for delivery. These systems usually do not cover antenatal and postnatal use of primary healthcare services or home births.

Hospital registers are generally set up for financial, planning, or other administrative reasons and not for health monitoring and epidemiological surveillance. The data items may therefore not be standardised for international use. Furthermore, financial incentives may also cause bias in some data, especially for diagnoses and surgical procedures.

The use of this data source to estimate incidence or prevalence data may result in overestimates when the discharge information cannot be clearly distinguished by a unique identifier. It can however be used for delivery and birth characteristics that occur only once. Furthermore, data from some countries do not distinguish between confirmed and suspected diagnoses. This too can lead to overestimation of, for example, congenital anomaly rates.

**b) Registers of induced abortions:**

Estonia, Italy, Norway, Scotland, and England and Wales

Several countries use their registers of induced abortions to obtain information on stillbirths and induced abortions due to congenital anomalies. These data sources are based on reports that doctors performing the induced abortion must complete and send to statutory authorities.

**c) Registries of congenital anomalies:**

Finland, France (Paris), Malta, Norway, Poland (Wielkopolska region), Sweden, and the UK (Wales and parts of England)

Four member states, two countries of the UK, and two regions used their congenital anomaly registers to provide information on certain congenital anomalies. These information systems are usually based on specific reporting forms for observed congenital anomalies, sometimes complemented with information from other sources, such as cause-of-death registers, routine death registration, and other health registers.

These registers may have different definitions for particular major congenital anomalies as well as different inclusion and exclusion criteria. Several registries follow the exclusion list used by EUROCAT.<sup>5</sup> Not all registries collect information on induced abortions performed due to congenital anomalies. Chapter 9 discusses in more detail the collection and sources of data on congenital anomalies and the association between EUROCAT and EURO-PERISTAT indicators.

**d) Other registers**

In addition, the following specific health registers were used:

- Denmark: the Fertility Register of the Danish Fertility Society
- Spain: Metabolopathies Register (metabolic diseases)
- UK Northern Ireland: Neonatal Intensive Care Outcomes Research and Evaluation (NICORE)
- UK Human Fertilisation and Embryology Authority Register
- Portugal: National Registry of Very Low Birth Weight

### **3.2.4. SURVEY DATA**

**a) Perinatal surveys:**

France, Italy, and Spain

Three countries use special surveys to monitor perinatal health. In France, one-week surveys of all births were conducted in 1995, 1998, and 2003; the next one is planned for 2009. This survey abstracts data from medical records and also from interviews with mothers after delivery. Coverage is good – up to 99%. In Spain, a 10% sample of all pregnancy summary sheets is collected to

infant mortality by gestational age and birth weight or maternal mortality by mode of delivery. Fewer countries could provide data for the recommended than for the core indicators, although availability was generally good for the Apgar score, maternal mortality by cause of death, mode of onset of labour, and place of birth. Not as many countries could provide data on breast feeding, births after fertility treatment, or the five components of severe maternal morbidity.

## **3.4 QUESTIONS COMPLICATING INTERNATIONAL COMPARISONS**

### **3.4.1. REGISTRATION CRITERIA**

EURO-PERISTAT requested data for all stillbirths and live births from 22 weeks of gestation and after for the indicators in the report. However, countries applied several different sets of criteria for registration of stillbirths, and some had different limits for live births, as shown in Table 3.1. Some countries were nonetheless able to provide data for births that occurred below the lower limits for legal registration, and this is noted in the table. Most countries followed the WHO criteria (birth weight of 500 g or gestational age of 22 weeks), although some used gestational age and others birth weight. Because official registration of stillbirth starts later than 22 weeks in Hungary (24 weeks), Portugal (24 weeks), Sweden (28 weeks), and Luxembourg (180 days for civil registration, 28 weeks for the birth register), their stillbirth rates are underestimated. In Italy, registration of stillbirths begins at 180 days (25 weeks + 5 days), but fetal deaths below this limit are recorded in the spontaneous abortion register, so Italy was able to provide data according to the EURO-PERISTAT cutoff point. In all four countries of the UK, the lower limit for civil registration of a fetal death as a stillbirth is 24 completed weeks of gestation, but data about late fetal deaths at 22 and 23 weeks of gestation are provided voluntarily and recorded. In still other countries, the limits for official registration of births and those used for inclusion in birth registers differ or some data sources can use different inclusion criteria. In the Czech Republic, fetal deaths are registered at 22 weeks and over and these data were provided; however, they are registered as 'births' once the fetus weighs 1000 g. In Ireland, the vital statistics office registers stillbirths at 24 weeks of gestation or at 500 g or more, whereas the National Perinatal Reporting System (NPRS) has only a 500 g limit.

Most countries had no limits for the registration of live births, but the Czech Republic and Poland had a 500 g limit, and France and the Netherlands had a gestational age or birthweight limit. Lithuania had a gestational age limit. In Luxembourg, the recommendation remains 28 weeks of gestation for the inclusion of births in the national birth register, but in practice, babies are registered under this limit, although not systematically. For live birth registration in Ireland, vital registration has no limit, but the NPRS has a limit of 500 g. Finally, in Malta, there is no limit for live birth registration in the National Obstetrics Information System, but a limit of 22 weeks or 500 grams in the National Mortality Register.

### **3.4.2. COVERAGE OF DATA COLLECTION**

Hospital-based data collection systems are likely to exclude planned births outside hospitals, as well as accidental home births and births during transportation to hospital, unless a special data collection scheme has been introduced for these cases. In some countries, for example in Cyprus, data collection is mandatory for public hospitals only, so that information from private hospitals may be less complete or even completely missing.

Civil registration and health registration systems may also have different inclusion criteria for non-residents. Civil registration usually includes citizens and permanent residents only, while health registration includes all cases in the registration area, for example, all births, regardless of

**Table 3.1 Lower limits of registration of stillbirths and live births**

Country/coverage	Lower limits for registration	
	Stillbirths	Live births
Belgium		
Flanders	≥ 500 g	no limit
Brussels	≥ 22 weeks or ≥ 500 g	no limit
Czech Republic	≥ 22 weeks, official registration at 1000 g	≥ 500 g or any BW surviving first 24 hours
Denmark	≥ 22 weeks	no limit
Germany	≥ 500 g	no limit
Estonia	≥ 22 weeks or ≥ 500 g	no limit
Ireland	≥ 24 weeks or ≥ 500 g for civil registration, ≥ 500 g for the national perinatal register	No limit for civil registration, ≥ 500 g for the national perinatal register
Greece	≥ 28 weeks	na
Spain	no limit	no limit
Valencia	> 22 weeks	no limit
France	≥ 22 weeks or ≥ 500 g	≥ 22 weeks or ≥ 500 g
Italy	Registered at 180 days (25 weeks + 5 days), but fetal deaths at 24, 23, and 22 weeks are available in register of spontaneous abortions	no limit
Cyprus	No register of stillbirths	no limit
Latvia	≥ 22 weeks	Heartbeat present, GA or BW criterion not specified
Lithuania	≥ 22 weeks	≥ 22 weeks
Luxembourg	Official civil registration at 180 days (25 weeks + 5 days). For birth registry, recommendation is 28 weeks, but many nurses and doctors report babies with lower gestational age	Official civil registration at 180 days (25 weeks + 5 days). For birth registry recommendation is 28 weeks, but many nurses and doctors report babies with lower gestational age
Hungary	≥ 24 weeks	no limit
Malta	≥ 22 weeks or ≥ 500 g	No limit for National Obstetrics Information System, ≥ 22 weeks or ≥ 500 g for National Mortality Register
Netherlands	≥ 22 weeks or ≥ 500 g, if GA is unknown	≥ 22 weeks or ≥ 500 g, if GA is unknown
Austria	≥ 500 g	no limit
Poland	≥ 500 g	≥ 500 g
Portugal	≥ 24 weeks	no limit
Slovenia	≥ 500 g	no limit
Slovak Republic	≥ 22 weeks	no limit
Finland	≥ 22 weeks or ≥ 500 g	no limit
Sweden	≥ 28 weeks	no limit
United Kingdom	≥ 24 weeks is the legal limit, but voluntary notification at 22 and 23 weeks	no limit
Norway	≥ 12 weeks	≥ 12 weeks

GA: gestational age; BW: birth weight; na: not available.

**Table 4.2** Data collected on mother's national origin and proportion of women with live or stillbirths who were of foreign origin defined by country of birth (or foreign nationality or ethnicity)

Countries	Definition	Number of Categories	Total Births	Births to women born outside of country (or other definition of foreign origin)	
			Number	Number	Percentage
Austria	Foreign nationality	2	79 229	20 402	25.8
Belgium					
BE: Flanders	Country of birth	all countries	52 135	6530	12.5
Cyprus	Country of birth	89	8119	2505	30.9
Denmark	Country of birth	97	63 157	8908	14.1
Estonia	Country of birth	12	13 879	1018	7.3
Finland	Country of birth	100	57 920	3853	6.7
France	Nationality	85	802 867	120 879	15.1
Germany	Country of origin	7	636 733	121 576	19.1
Ireland	Country of birth	34	61 437	11 147	18.1
Italy	Country of birth	3	534 568	80 757	15.1
Latvia	Foreigners vs residents	2	20 255	23	0.1
Netherlands	Depends on the caregiver completing the form (country of birth, nationality, or ethnicity)	8	178 774	32 576	18.2
Portugal	Nationality	24	109 356	8482	7.8
Spain	Country of birth	99	43 691	5927	13.6
United Kingdom	Country of birth				
UK: England and Wales	Country of birth	240	633 728	134 041	21.2
UK: Scotland	Country of birth	all countries	53 957	4219	7.8
UK: Northern Ireland	Country of birth	all countries	22 318	1855	8.3

Note: n of categories refers to the level of detail provided about country of origin.



### **Methodological issues in the computation, reporting and interpretation of the indicator**

Countries differ in the ways that they classify caesarean sections. Some countries subdivide them according to whether they were undertaken before or during labour. Others use the subdivision into elective caesarean sections, which include all those planned before the onset of labour and thus include a few that take place after labour has started, and emergency or unplanned caesarean sections. Sometimes, as in the Scottish Audit of Caesarean Section, emergency caesarean sections include those performed before the onset of labour in response to a clinical emergency.<sup>9</sup>

In Flanders, Estonia, Italy, Lithuania, Malta, Slovenia, the Slovak Republic, and Finland, rates were reported per woman. This may result in slight underestimates of operative deliveries, as multiple births to one woman will be counted only once.

### **Data sources and availability of indicator**

Method of delivery was provided everywhere except Greece and Cyprus. Data from Spain were provided from one region, and it is not clear whether this region is typical of Spain as a whole. Poland did not subdivide vaginal deliveries to identify instrumental vaginal deliveries. Information about whether caesarean sections took place before labour or were elective was not provided in Spain, Ireland, Lithuania, Luxembourg, Hungary, Austria, Poland, Portugal, or the Slovak Republic. Rates by parity were not recorded in Brussels, Italy, Hungary, Poland, or Wales. Whether the woman had a previous caesarean section was not recorded in Brussels, Ireland, Italy, Luxembourg, Hungary, Austria, Poland, the Slovak Republic, England, Wales, or Northern Ireland. Fetal presentation was not recorded in Spain, Ireland, Hungary, Austria, Poland, Portugal, England, Wales, or Northern Ireland. Rates by multiplicity were not available for Hungary, Poland, or England.

### **Results**

Italy had the highest overall caesarean rate, at 37.8%, followed by Portugal with 33.1%, as Figure 5.1 shows. Rates everywhere else were below 30%. They were in the 25-29% range in Germany, Ireland, Luxembourg, Hungary, Malta, Poland, Wales, and Northern Ireland. The lowest rates were in Slovenia (14.4%) and the Netherlands (15.1%), with Flanders, Brussels, the Czech Republic, Estonia, Latvia, Lithuania, Finland, Sweden, and Norway also having rates less than 20%. There was no clear inverse correlation with rates of instrumental vaginal delivery, which exceeded 10% in Ireland, Flanders, Spain, France, the Netherlands, Portugal, England, Scotland, and Northern Ireland. For the countries with available data, caesarean section rates were subdivided into those planned or undertaken before labour and those where the decision or the caesarean were undertaken after the onset of labour.

Many countries with high overall caesarean section rates also had high rates among primiparous women. These included Germany and Northern Ireland which had rates over 30% among primiparous women, and Ireland, Spain, Luxembourg, Malta, Austria, and Scotland, where over a quarter of births to primiparous women were by caesarean section (see tables in Appendix B). Countries with high overall rates of vaginal instrumental birth tended to have high rates for primiparous women, but there was no clear association between these and rates among multiparous women. There was also considerable variation in caesarean section rates among women who had had a previous caesarean section. These were relatively low, between 45-55%, in the Netherlands, Norway, Finland, and Sweden. They ranged from 70-80% in Estonia, Spain, Malta, Portugal, Slovenia, and Scotland and reached 81% in Lithuania and 91% in Latvia.

Breech deliveries accounted for a relatively small proportion, around 4%, of all births. In 9 of the 19 countries or regions for which data were available, 80% or more of breech babies were delivered by caesarean section. In contrast, only 35% of those in Lithuania, 55% of those in Italy, 65% of those in Slovenia, and 66% of those in Norway were by caesarean section.

Variations in practice were also observed for multiple births. Between 70 and 90% of multiple births in Germany, Spain, Italy, Luxembourg, Malta, and Austria were by caesarean section. Only 36% of those in the Netherlands, between 40 and 50% in Slovenia, Lithuania, Finland, and Norway, and just over half in Flanders, Brussels, Estonia, Ireland, France, and Sweden were by caesarean section.

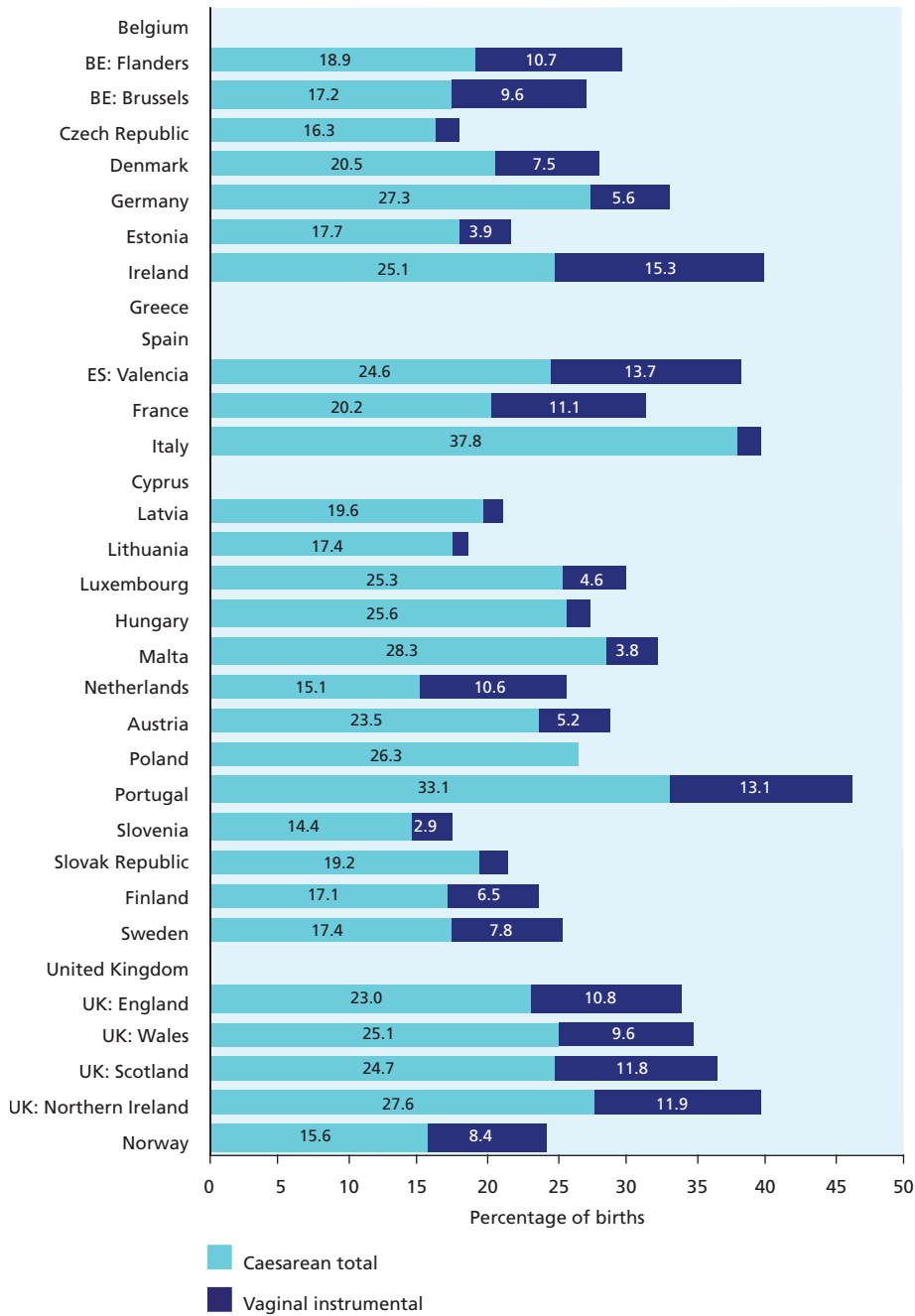
### KEY POINTS

Data about mode of delivery show marked variations, with relatively low levels of intervention in Slovenia, the Nordic countries, the Netherlands, and the Baltic countries, and higher levels in the more southern countries, notably Italy, Portugal, Spain, and Malta, as well as in the countries of the United Kingdom, most notably Northern Ireland. These differences in practice raise questions about clinical effectiveness and the role of evidence.

### REFERENCES

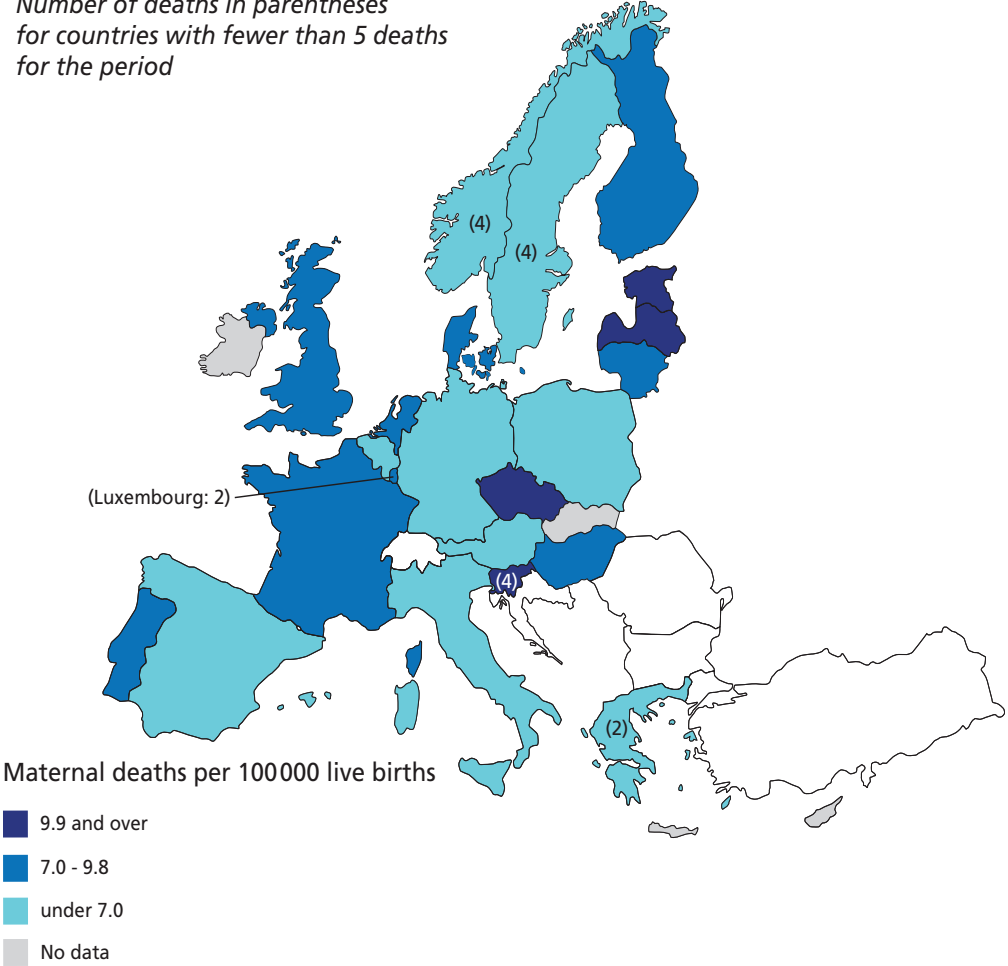
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**Figure 5.1** Percentage of births by mode of delivery

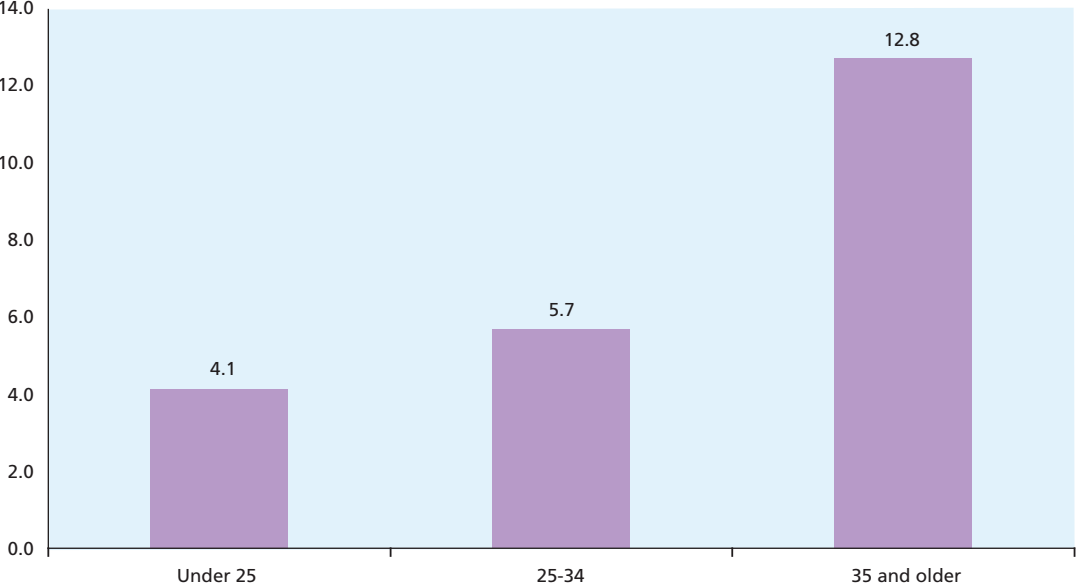


**Figure 6.1** Map of maternal mortality ratios in European Union member states

Number of deaths in parentheses for countries with fewer than 5 deaths for the period



**Figure 6.2** Maternal mortality ratios in Europe by maternal age



## 6.3 SEVERE MATERNAL MORBIDITY

### INDICATOR TITLE: (F2) SEVERE MATERNAL MORBIDITY PER 1000 WOMEN WITH LIVE AND STILLBORN BABIES

Maternal mortality is the measure traditionally used to evaluate the status of women's health in pregnancy. During the 20th century, however, maternal death rates have decreased dramatically: women die in childbirth quite rarely now in Europe and in other developed nations – around 0.1 for every 1000 births. This welcome decline has given rise, however, to concerns about the statistical power and validity of studies based on such small numbers. The rarity of maternal death in developed countries does not mean that pregnancy is a safe condition. For every maternal death, there are many serious, even life-threatening episodes of pregnancy complications. For example, research from the United States reports 128 hospital admissions for every 1000 deliveries,<sup>1</sup> and severe maternal morbidity has been estimated to occur at rates ranging from 9.5 to 16 cases per 1000 deliveries throughout Europe.<sup>2</sup> Other work to establish the level of maternal morbidity within different European countries has produced estimates ranging from 1.0 to 10.1 per 1000 deliveries, but there are no widely accepted definitions or inclusion criteria.<sup>3-6</sup>

The EURO-PERISTAT study set up a working group to conduct an extensive review of potential maternal morbidity indicators, to develop a consensus around their definition for EURO-PERISTAT, and to analyse the validity of morbidity indicators based on hospital data from participating countries. Results from this review were presented during a working group meeting in Porto (June 2008), and consensus was reached about the indicators of severe maternal morbidity that should be collected and validated. These included four indicators adopted during the first phase of the project (eclampsia, surgery, blood transfusion, and ICU admission), and embolisation, which was added as a fifth indicator.

#### Definition and presentation of indicator

The proposed EURO-PERISTAT indicator includes both management-based and disease-specific criteria. It is defined as the number of women experiencing any combination of the following conditions or procedures, as a proportion of all women with live and stillborn babies: eclamptic seizures, surgery (other than tubal ligation or caesarean section) or embolisation, blood transfusion, a stay of more than 24 hours in an intensive care unit, or embolisation.

#### Data availability

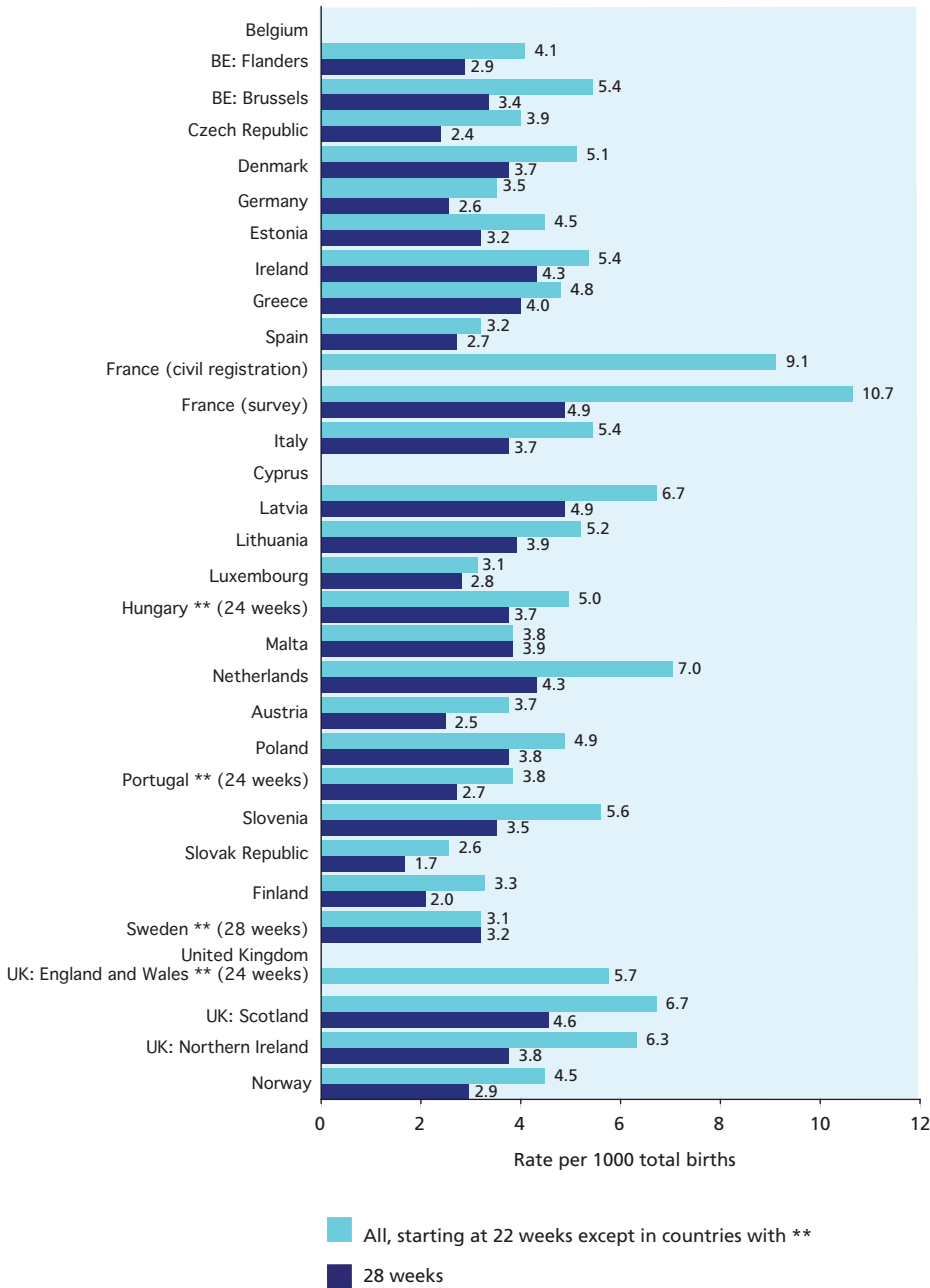
We had expected that these data on the prevalence of embolisation, eclampsia, blood transfusion, and surgery for postpartum haemorrhage would be easy to collect through the data files existing at the hospital level. We know that most member states have financial systems that allocate funding to the hospitals delivering care and consequently systems for recording the number of patients with conditions such as severe maternal morbidity. However, these systems do not appear to be able to produce data on these complications at this time.

#### Results

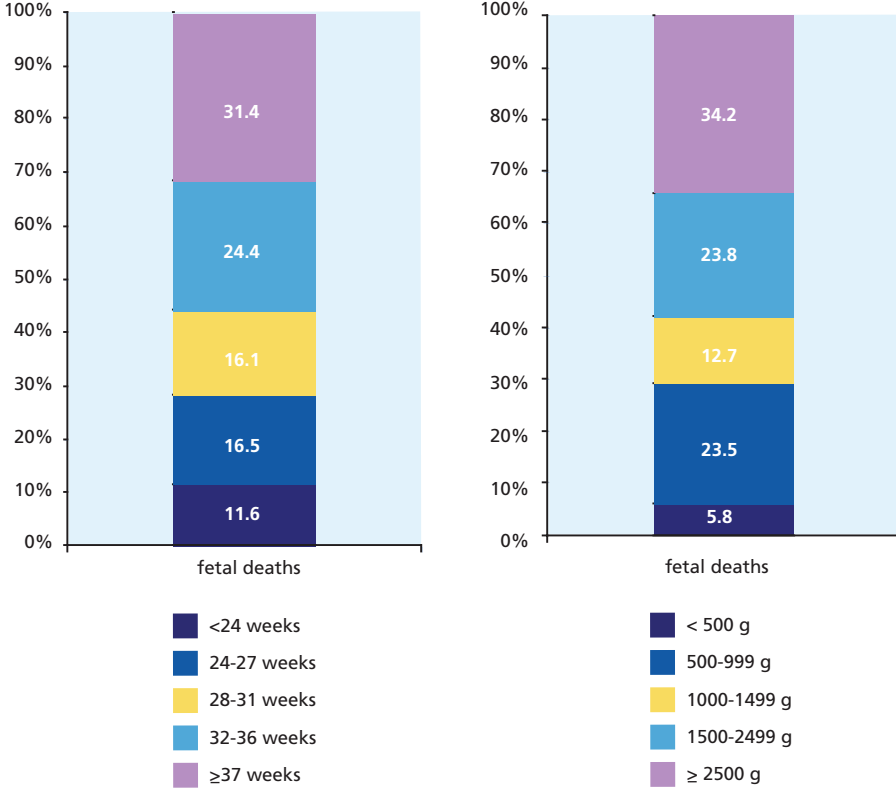
Sixteen member states provided at least one of the components of the maternal morbidity indicator, as shown in Table 6.4. Only three provided all the categories, however, including admission to an ICU: France, the Netherlands, and Germany.

Figure 6.5 presents MMRs for hysterectomy for postpartum haemorrhage and eclampsia, the two complications most frequently reported. This figure shows large disparities in these measures between countries. Further investigation is required to understand these differences.

**Figure 7.1 Fetal mortality rate per 1000 total births**



**Figure 7.2** Percentage of fetal deaths by gestational age and birthweight group in all countries contributing data



## 7.5 GESTATIONAL AGE DISTRIBUTION

### INDICATOR TITLE: (C5) DISTRIBUTION OF GESTATIONAL AGE

#### Justification

Very preterm birth is one of the principal determinants of perinatal death and childhood impairment in Europe today.<sup>1-4</sup> Very preterm babies have the highest rates of long-term health problems, including cerebral palsy, severe learning disabilities, chronic lung disease, visual and hearing impairments, and poor growth. However, babies born between 32 and 36 weeks of gestation, often termed mildly or moderately preterm births, also have higher mortality and a greater likelihood of motor and learning difficulties than term babies do.<sup>5-7</sup> The preterm birth rate has increased in many countries over the past decade;<sup>8</sup> these trends must be monitored.

Post-term births are also associated with poor outcomes, and large variations in rates in Europe illustrate differences in approaches to the management of prolonged pregnancies.<sup>9</sup>

Preterm birth rates are 7 to 10 times higher for multiple births than for singleton births, and EUROPERISTAT recommends that preterm birth rates be computed by multiplicity.

#### Definition and presentation of indicator

This indicator is defined as the number of live births and fetal deaths at each completed week of gestation (starting from 22 weeks), expressed as a proportion of all live and stillbirths. This distribution is presented as follows: 22-36 weeks of gestation (preterm births); 37-41 weeks (term births); 41+ weeks (post-term). Preterm births can be subdivided as 22-27 weeks (extremely (preterm), 28-31 weeks (very preterm), and 32-36 weeks (moderately preterm). This indicator is computed by vital status at birth and plurality. The summary indicators presented below are computed for live births.

#### Data sources and availability of indicator in European countries

This indicator is available in most European countries.

#### Methodological issues in the computation, reporting, and interpretation of the indicator

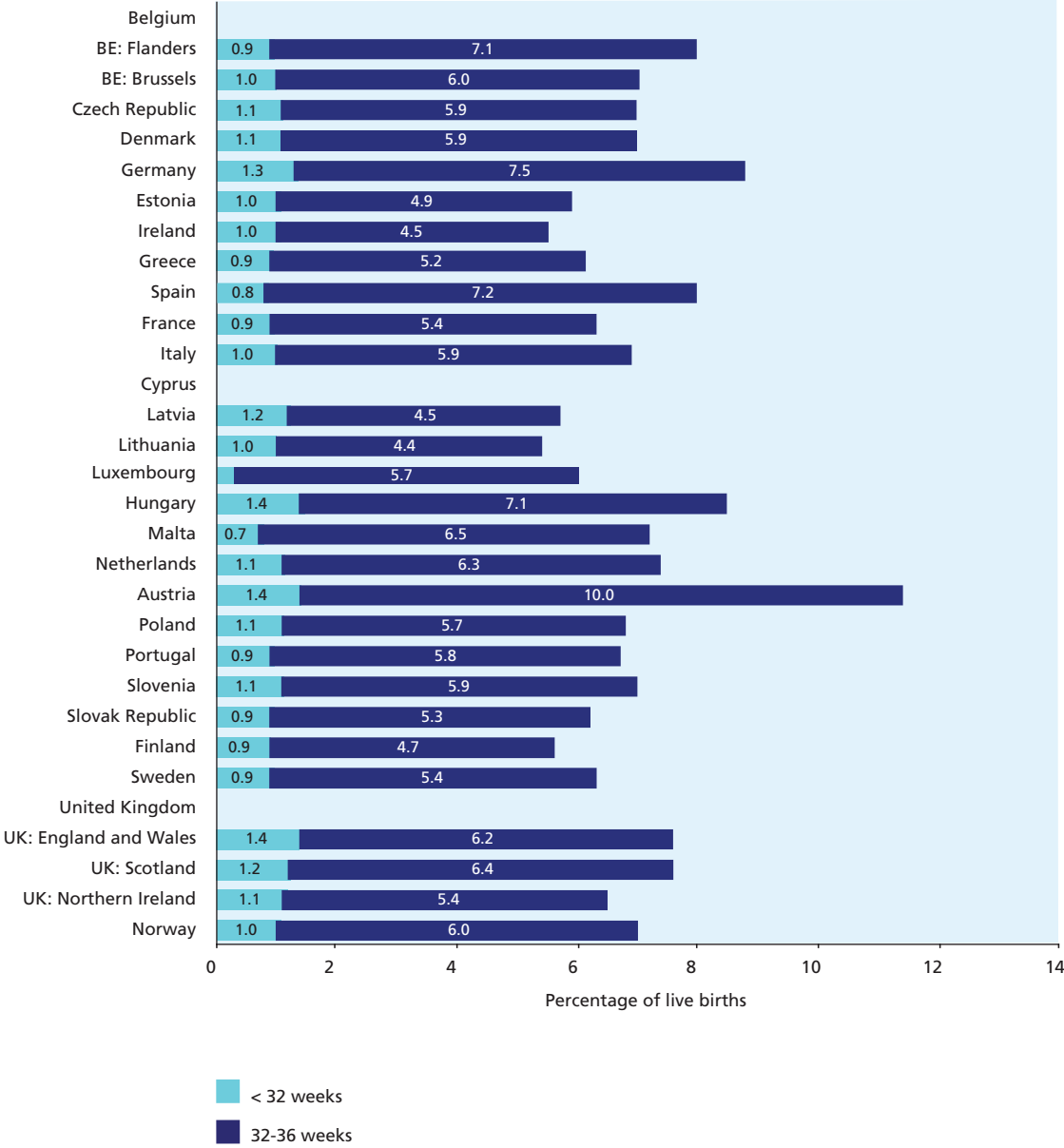
In most countries, data on gestational age is based on the “best obstetrical estimate”, which combines clinical and ultrasound data, but some countries favour use of last menstrual period and others use only ultrasound estimates. There are also differences within countries. The method of determining gestational age can influence the gestational age distribution; use of ultrasound estimates tends to shift the distribution to the left and increase the preterm birth rate, although not all studies have found that this is the case. Research on methods used within Europe for determining gestational age and their impact on the gestational age distribution should be undertaken to validate the comparability of this indicator.

#### Results

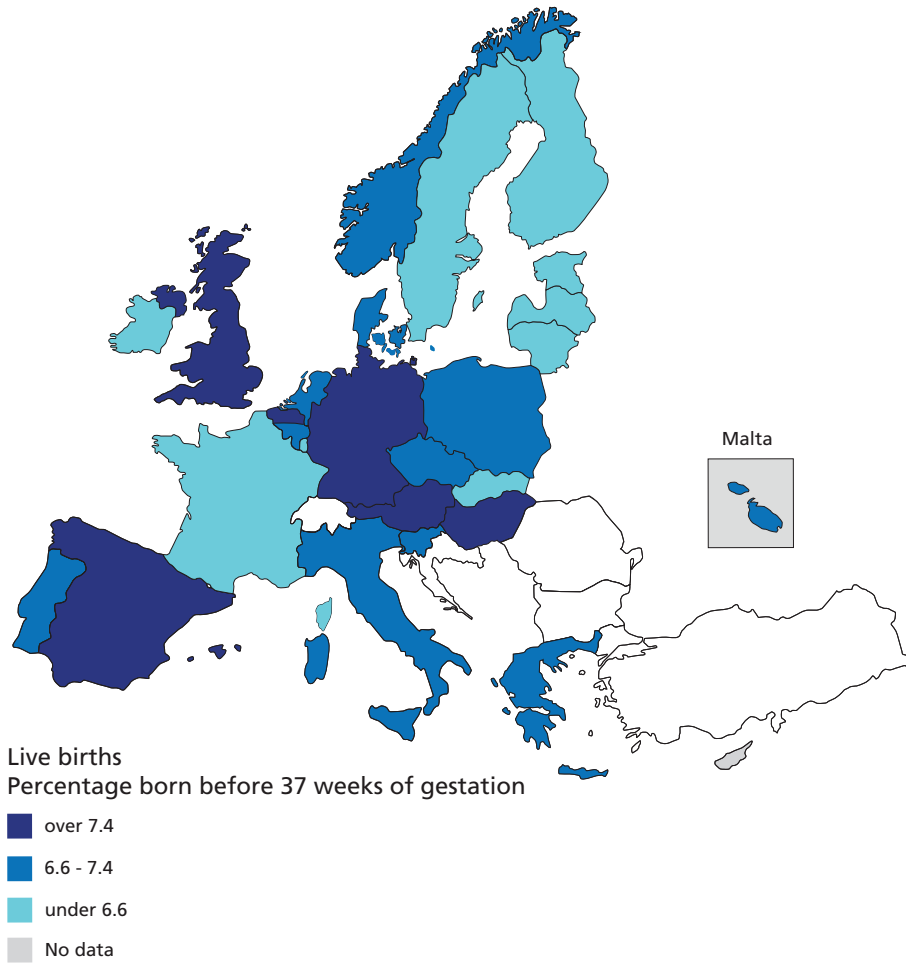
The preterm birth rate for live births varied from about 5% to 11% in Europe. We observed relatively lower preterm birth rates in Finland, the Baltic countries, France, and Sweden, and higher rates in Austria (11.4%) and Germany (8.9). Rates were around 8% in the Flanders region of Belgium and in Spain. Some of this variability may be explained by the prevalence of multiple births, which have higher rates of preterm birth. Very preterm births, that is, births before 32 weeks of gestational age, accounted for about 1% of all births (range: 0.8 to 1.4). Because of a problem with under-ascertainment, the rate in Luxembourg underestimates the proportion of very preterm births. As with the birthweight distribution, variation was more pronounced for moderately preterm births than very preterm births. Unlike the birthweight distribution, there was no clear geographic pattern of preterm birth.



**Figure 7.10** Percentage of live births with a gestational age <32 weeks and between 32-36 weeks



**Figure 7.11** Preterm (before 37 weeks of gestation) live births



**Table 9.3 Comparison of EURO-PERISTAT and EUROCAT livebirth and total prevalence rates per 1000 births for anencephaly, spina bifida, cleft lip and/or palate, and Down Syndrome, 2004**

Country	Source	LB rate per 1000 births EURO-PERISTAT				LB rate per 1000 births EUROCAT				LB + FD + TOP rate per 1000 births EURO-PERISTAT				LB + FD + TOP rate per 1000 births EUROCAT				
		Anencephaly	Spina Bifida	Cleft lip and/or cleft palate	Down Syndrome	Anencephaly	Spina Bifida	Cleft lip and/or cleft palate	Down Syndrome	Anencephaly	Spina Bifida	Cleft lip and/or cleft palate	Down Syndrome	Anencephaly	Spina Bifida	Cleft lip and/or cleft palate	Down Syndrome	
EUROCAT (All)						0.03	0.20	1.21	0.98					0.36	0.50	1.38	2.08	
EURO-PERISTAT (All)		0.02	0.17	1.02	0.65					0.15	0.27	1.07	1.08					
EURO-PERISTAT (All excluding EUROCAT)		0.02	0.16	0.94	0.58					0.12	0.26	0.98	0.89					
Belgium	Flanders	EURO-PERISTAT	0.03	0.28	1.17	0.49					0.05	0.38	1.18	0.53				
		EURO-PERISTAT	0.00	0.25	NA						0.06	0.31	0.74					
		EUROCAT					0.00	0.03	2.11	0.88					0.19	0.45	2.17	1.78
Czech Republic		EURO-PERISTAT	0.02	0.08	1.22	0.41					0.12	0.26	1.38	0.92				
Denmark	Funen County	EURO-PERISTAT	0.00	0.63	2.37	1.03					0.00	0.66	1.42	1.06				
		EUROCAT					0.00	0.38	1.90	0.38					0.57	0.38	2.08	1.89
Germany		EURO-PERISTAT	0.02	0.12	0.78	0.37					0.03	0.14	0.79	0.40				
		EUROCAT					0.00	0.64	1.66	1.27					0.24	1.07	1.99	2.38
Estonia		EURO-PERISTAT	0.00	0.00	NA	0.07					0.00	0.04	NA	0.15				
Spain		EUROCAT					0.02	0.02	0.83	0.71					0.51	0.24	0.97	2.64
France	Paris France (inc Paris)	EURO-PERISTAT / EUROCAT Paris	0.00	0.15	0.80	0.50					0.55	0.40	1.25	4.04				
		EUROCAT					0.00	0.15	0.82	0.51					0.61	0.41	1.27	4.10
		EUROCAT					0.00	0.17	1.10	0.54					0.63	0.49	1.56	3.02
Ireland		EUROCAT					0.15	0.44	1.21	1.69					0.23	0.46	1.25	1.86
Italy		EUROCAT					0.02	0.12	0.72	0.57					0.18	0.40	0.87	1.58
Latvia		EURO-PERISTAT	0.00	0.39	0.63	0.73					0.00	0.39	0.63	0.73				
Lithuania		EURO-PERISTAT	0.00	0.61	1.21	1.32					0.13	0.64	1.21	1.32				
Luxembourg		EURO-PERISTAT	0.00	0.00	NA	NA					0.00	0.00	1.28	0.36				
Hungary	Hungary*	EURO-PERISTAT	0.01	0.09	0.80	0.50					0.14	0.22	0.82	1.01				
		EUROCAT					0.07	0.20	1.17	1.01					0.28	0.40	1.05	1.39
Malta	Malta	EURO-PERISTAT / EUROCAT Malta	0.00	0.51	1.54	1.03					0.26	0.51	1.54	1.03				
		EUROCAT					0.00	0.51	1.80	1.03					0.26	0.51	1.79	1.03
Netherlands		EURO-PERISTAT	0.06	0.32	1.37	1.17					0.11	0.43	1.45	1.25				
N Netherlands		EUROCAT					0.00	0.26	1.63	0.89					0.05	0.57	1.78	1.57

## EURO-PERISTAT indicators for the year 2004

C10: Mode of delivery (numbers and percentages of total births)																		
Country/coverage	Source	Number of total births	Number of total births								Percentage of total births							
			Mode of delivery								Mode of delivery							
			Vag - spon	Vag - instr	Vag - total	CS - no lab	CS - lab	CS - total	All stated	Not stated	Vag - spon	Vag - instr	Vag - total	CS - no lab	CS - lab	CS - total	All stated	Not stated
Belgium																		
Flanders	BE_01	60 921	42 886	6 519	49 405	6 845	4 671	11 516	60 921	0	70.4	10.7	81.1	11.2	7.7	18.9	100.0	0.0
Brussels <sup>2</sup>	BE_02	16 288	11 380	1 500	12 880	NA	NA	2 681	15 561	727	73.1	9.6	82.8	NA	NA	17.2	100.0	4.7
Czech Republic <sup>4</sup>	CZ_01	96 098	78 969	1 495	80 464	7 438	8 196	15 634	96 098	0	82.2	1.6	83.7	7.7	8.5	16.3	100.0	0.0
Denmark	DK_01	63 767	45 920	4 806	50 726	7 278	5 763	13 041	63 767	0	72.0	7.5	79.5	11.4	9.0	20.5	100.0	0.0
Germany	DE_01	648 860	434 589	36 415	471 004	92 375	84 306	176 681	647 685	1 175	67.1	5.6	72.7	14.3	13.0	27.3	100.0	0.2
Estonia	EE_01	14 053	10 979	553	11 532	926	1 562	2 488	14 020	33	78.3	3.9	82.3	6.6	11.1	17.7	100.0	0.2
Ireland <sup>2</sup>	IE_01	62 400	37 188	9 513	46 701	NA	NA	15 679	62 380	20	59.6	15.3	74.9	NA	NA	25.1	100.0	0.0
Greece <sup>1</sup>																		
Spain																		
Valencia <sup>2</sup>	ES_03	38 290	23 651	5 237	28 888	NA	NA	9 402	38 290	0	61.8	13.7	75.4	NA	NA	24.6	100.0	0.0
France	FR_01	14 737	10 100	1 631	11 731	1 897	1 068	2 965	14 696	41	68.7	11.1	79.8	12.9	7.3	20.2	100.0	0.3
Italy	IT_04	542 003	326 689	8 889	335 578	134 317	69 340	203 657	539 235	2 768	60.6	1.6	62.2	24.9	12.9	37.8	100.0	0.5
Cyprus <sup>1</sup>																		
Latvia <sup>4</sup>	LV_01	20 256	15 975	308	16 283	1 933	2 040	3 973	20 256	0	78.9	1.5	80.4	9.5	10.1	19.6	100.0	0.0
Lithuania <sup>2</sup>	LT_01	29 633	24 151	304	24 455	NA	NA	5 140	29 595	38	81.6	1.0	82.6	NA	NA	17.4	100.0	0.1
Luxembourg <sup>2</sup>	LU_01	5 483	3 799	250	4 049	NA	NA	1 373	5 422	61	70.1	4.6	74.7	NA	NA	25.3	100.0	1.1
Hungary <sup>2</sup>	HU_03	95 613	69 427	1 746	71 173	NA	NA	24 440	95 613	0	72.6	1.8	74.4	NA	NA	25.6	100.0	0.0
Malta	MT_01	3 902	2 647	150	2 797	593	512	1 105	3 902	0	67.8	3.8	71.7	15.2	13.1	28.3	100.0	0.0
Netherlands	NL_02	182 279	135 418	19 226	154 644	12 830	14 661	27 491	182 135	144	74.4	10.6	84.9	7.0	8.0	15.1	100.0	0.1
Austria <sup>2</sup>	AT_02	79 229	56 431	4 157	60 588	NA	NA	18 641	79 229	0	71.2	5.2	76.5	NA	NA	23.5	100.0	0.0
Poland <sup>3,4</sup>	PL_02	350 048	NA	NA	257 927	NA	NA	92 121	350 048	0	NA	NA	73.7	NA	NA	26.3	100.0	0.0
Portugal <sup>2,5</sup>	PT_01	108 258	57 692	14 036	71 728	NA	NA	35 467	107 195	1 063	53.8	13.1	66.9	NA	NA	33.1	100.0	1.0
Slovenia	SI_01	17 946	14 846	517	15 363	958	1 616	2 574	17 937	9	82.8	2.9	85.6	5.3	9.0	14.4	100.0	0.1
Slovak Republic <sup>2,4</sup>	SK_01	51 968	40 638	1 017	41 655	NA	NA	9 896	51 551	417	78.8	2.0	80.8	NA	NA	19.2	100.0	0.8
Finland	FI_01	57 759	44 101	3 762	47 863	4 455	5 434	9 889	57 752	7	76.4	6.5	82.9	7.7	9.4	17.1	100.0	0.0
Sweden	SE_01	100 474	74 884	7 799	82 683	8 794	8 604	17 398	100 081	393	74.8	7.8	82.6	8.8	8.6	17.4	100.0	0.4
United Kingdom																		
England	UK_04	583 500	386 100	63 100	449 200	54 900	79 400	134 300	583 500	0	66.2	10.8	77.0	9.4	13.6	23.0	100.0	0.0
Wales	UK_10	29 632	19 168	2 834	22 002	3 078	4 308	7 386	29 388	244	65.2	9.6	74.9	10.5	14.7	25.1	100.0	0.8
Scotland	UK_06	52 911	33 584	6 223	39 807	4 939	8 147	13 086	52 893	18	63.5	11.8	75.3	9.3	15.4	24.7	100.0	0.0
Northern Ireland	UK_07	22 434	13 536	2 670	16 206	3 467	2 705	6 172	22 378	56	60.5	11.9	72.4	15.5	12.1	27.6	100.0	0.3
Norway	NO_01	57 368	43 580	4 811	48 391	2 893	6 084	8 977	57 368	0	76.0	8.4	84.4	5.0	10.6	15.6	100.0	0.0

ABBREVIATIONS: Vag - spon (vaginal spontaneous); Vag - instr (vaginal instrumental); CS - no lab (caesarean section - no labour/elective); CS - lab (caesarean section - during labour/emergency). <sup>1</sup> Greece and Cyprus provided no data on mode of delivery. <sup>2</sup> Brussels, Valencia, Ireland, Lithuania, Luxembourg, Hungary, Austria, Portugal and Slovak Republic provided the total number of caesarean sections. <sup>3</sup> Poland provided the total number of vaginal deliveries and the total number of caesarean sections. <sup>4</sup> Czech Republic, Latvia, Poland and Slovak Republic provided data on maternal level (number of women delivering live or still births) instead of child level (number of live and still births). <sup>5</sup> Data from Portugal is based on live and still births at or after 24 weeks of gestation.

## EURO-PERISTAT indicators for the year 2004

C10_A: Mode of delivery by parity																			
		Nullipara									Multipara								
		Number of births	Percentage of births by mode of delivery								Number of births	Percentage of births by mode of delivery							
Country/coverage	Source		Vag - spon	Vag - instr	Vag - total	CS - no lab	CS - lab	CS - total	All stated	Not stated		Vag - spon	Vag - instr	Vag - total	CS - no lab	CS - lab	CS - total	All stated	Not stated
Belgium																			
Flanders	BE_01	29 143	61.6	18.0	79.6	9.3	11.1	20.4	100.0	0.0	31 778	78.5	4.0	82.5	13.0	4.5	17.5	100.0	0.0
Czech Republic <sup>6</sup>	CZ_01	49 834	78.7	2.4	81.1	8.0	10.9	18.9	100.0	0.0	46 264	85.9	0.6	86.6	7.4	6.0	13.4	100.0	0.0
Denmark	DK_01	27 099	63.6	13.8	77.3	9.2	13.5	22.7	100.0	0.0	35 434	78.4	2.7	81.1	13.2	5.6	18.9	100.0	0.0
Germany <sup>4</sup>	DE_01	323 989	58.6	9.1	67.7	14.5	17.8	32.3	100.0	0.3	324 871	75.8	2.0	77.9	14.0	8.1	22.1	100.0	3.2
Estonia	EE_01	6 921	74.0	6.7	80.6	5.2	14.1	19.4	100.0	0.2	7 104	82.5	1.3	83.8	8.0	8.2	16.2	100.0	0.3
Ireland	IE_01	24 999	44.9	26.8	71.7	NA	NA	28.3	100.0	0.0	37 370	69.5	7.6	77.0	NA	NA	23.0	100.0	0.0
Greece <sup>1</sup>																			
Spain																			
Valencia <sup>3</sup>	ES_04	3 850	57.1	15.7	72.9	NA	NA	27.1	100.0	6.9	4 644	65.1	12.5	77.6	NA	NA	22.4	100.0	5.6
France	FR_01	6 286	57.7	19.3	77.0	11.9	11.0	23.0	100.0	0.3	8 221	77.4	4.7	82.1	13.6	4.3	17.9	100.0	0.2
Italy <sup>2</sup>																			
Cyprus <sup>1</sup>																			
Latvia <sup>6</sup>	LV_01	10 765	76.5	2.5	79.0	8.3	12.7	21.0	100.0	0.0	9 491	81.6	0.4	82.0	10.9	7.1	18.0	100.0	0.0
Lithuania	LT_01	14 830	78.9	1.7	80.5	NA	NA	19.5	100.0	0.1	14 803	84.3	0.4	84.7	NA	NA	15.3	100.0	0.1
Luxembourg	LU_01	2 473	64.1	7.3	71.4	NA	NA	28.6	100.0	1.2	3 008	75.0	2.4	77.3	NA	NA	22.7	100.0	1.0
Hungary <sup>2</sup>																			
Malta	MT_01	2 019	64.5	5.8	70.3	12.6	17.1	29.7	100.0	0.0	1 883	71.4	1.8	73.1	18.0	8.9	26.9	100.0	0.0
Netherlands	NL_02	84 296	63.3	18.6	81.9	6.5	11.6	18.1	100.0	0.1	97 928	83.8	3.7	87.5	7.5	5.0	12.5	100.0	0.1
Austria	AT_02	36 373	64.5	9.2	73.6	NA	NA	26.4	100.0	0.0	42 856	77.0	1.9	78.9	NA	NA	21.1	100.0	0.0
Poland <sup>2</sup>																			
Portugal <sup>2</sup>																			
Slovenia	SI_01	8 968	78.1	4.8	83.0	4.7	12.3	17.0	100.0	0.0	8 978	87.4	0.9	88.3	6.0	5.7	11.7	100.0	0.1
Slovak Republic <sup>6</sup>	SK_01	23 297	74.5	3.2	77.7	NA	NA	22.3	100.0	0.8	28 671	82.3	1.0	83.3	NA	NA	16.7	100.0	0.8
Finland	FI_01	24 454	67.1	11.9	79.0	7.1	13.8	21.0	100.0	0.0	33 305	83.1	2.6	85.7	8.1	6.2	14.3	100.0	0.0
Sweden	SE_01	44 773	67.2	13.7	80.9	7.0	12.0	19.1	100.0	0.3	55 701	81.0	3.0	84.0	10.2	5.8	16.0	100.0	0.4
United Kingdom <sup>2</sup>																			
England <sup>5</sup>	UK_04	179 500	58.5	17.4	75.9	6.1	18.0	24.1	100.0	0.0	298 800	71.4	6.2	77.6	11.3	11.0	22.4	100.0	0.0
Scotland	UK_06	23 401	53.2	20.3	73.5	4.8	21.7	26.5	100.0	0.1	29 423	71.7	5.0	76.7	12.9	10.4	23.3	100.0	0.0
Northern Ireland	UK_07	7 746	47.7	21.4	69.1	11.5	19.4	30.9	100.0	0.2	10 828	67.9	5.2	73.1	19.9	7.0	26.9	100.0	0.3
Norway	NO_01	23 698	67.1	15.2	82.3	3.4	14.3	17.7	100.0	0.0	33 670	82.2	3.6	85.8	6.2	8.0	14.2	100.0	0.0

ABBREVIATIONS: Vag - spon (vaginal spontaneous); Vag - instr (vaginal instrumental); CS - no lab (caesarean section - no labour/elective); CS - lab (caesarean section - during labour/emergency).

<sup>1</sup> Greece and Cyprus provided no data on mode of delivery. <sup>2</sup> Italy, Hungary, Poland, Portugal and Wales provided no data on mode of delivery by parity. <sup>3</sup> Valencia provided data on mode of delivery by parity for the year 2005.

<sup>4</sup> For Germany "not stated" includes caesarean section other than "labour/no labour". <sup>5</sup> Data for England was grossed up to allow 25% of data missing. A total of 1,200 births by 'other' methods of delivery were excluded from

"All stated". <sup>6</sup> Czech Republic, Latvia and Slovak Republic provided data on maternal level (number of women delivering live or still births) instead of child level (number of live and still births).

## EURO-PERISTAT indicators for the year 2004

C10 D: Mode of delivery by plurality																				
Country/coverage	Source	Number of births	Singletons								Twins									
			Percentage by mode of delivery								Percentage by mode of delivery									
			Vag - spon	Vag - instr	Vag - total	CS - no lab	CS - lab	CS - total	All stated	Not stated	Number of births	Vag - spon	Vag - instr	Vag - total	CS - no lab	CS - lab	CS - total	All stated	Not stated	
Belgium																				
	Flanders	BE_01	58 997	71.4	10.8	82.2	10.5	7.3	17.8	100.0	0.0	1 886	40.7	6.3	47.0	33.1	19.9	53.0	100.0	0.0
	Brussels	BE_02	15 738	74.3	9.8	84.0	NA	NA	16.0	100.0	4.5	523	42.0	6.4	48.4	NA	NA	51.6	100.0	4.0
	Czech Republic <sup>3</sup>	CZ_01	94 288	83.2	1.6	84.7	7.1	8.2	15.3	100.0	0.0	1 791	30.5	1.1	31.7	42.2	26.2	68.3	100.0	0.0
	Denmark	DK_01	62 292	72.9	7.6	80.5	10.8	8.8	19.5	100.0	0.0	1 439	35.2	7.0	42.2	36.8	21.1	57.8	100.0	0.0
	Germany	DE_01	625 413	68.7	5.7	74.4	13.1	12.5	25.6	100.0	1.7	22 476	25.6	2.4	28.0	45.2	26.8	72.0	100.0	2.8
	Estonia	EE_01	13 716	79.1	4.0	83.1	6.2	10.7	16.9	100.0	0.2	334	45.8	2.7	48.5	21.6	29.9	51.5	100.0	0.0
	Ireland	IE_01	60 493	60.6	15.2	75.8	NA	NA	24.2	100.0	0.0	1 849	28.8	16.2	45.0	NA	NA	55.0	100.0	0.0
	Greece <sup>1</sup>																			
	Spain																			
	Valencia	ES_03	33 144	63.7	13.5	77.2	NA	NA	22.8	100.0	0.0	622	19.9	7.9	27.8	NA	NA	72.2	100.0	0.0
	France	FR_01	14 228	69.7	11.2	80.9	12.1	7.0	19.1	100.0	0.3	506	40.9	8.9	49.8	36.1	14.1	50.2	100.0	0.4
	Italy	IT_04	528 160	61.6	1.7	63.3	24.1	12.6	36.7	100.0	0.4	13 110	17.3	0.6	17.9	58.4	23.6	82.1	100.0	1.1
	Cyprus <sup>1</sup>																			
	Latvia <sup>3</sup>	LV_01	20 022	79.3	1.5	80.8	9.4	9.8	19.2	100.0	0.0	232	41.4	0.4	41.8	24.1	34.1	58.2	100.0	0.0
	Lithuania	LT_01	28 984	82.2	1.0	83.2	NA	NA	16.8	100.0	0.1	634	56.7	0.5	57.2	NA	NA	42.8	100.0	0.2
	Luxembourg	LU_01	5 330	71.3	4.7	76.0	NA	NA	24.0	100.0	1.0	147	25.5	2.8	28.4	NA	NA	71.6	100.0	4.1
	Hungary <sup>2</sup>																			
	Malta	MT_01	3 782	69.7	3.9	73.6	13.9	12.6	26.4	100.0	0.0	100	12.0	2.0	14.0	60.0	26.0	86.0	100.0	0.0
	Netherlands	NL_02	175 117	75.2	10.6	85.8	6.5	7.7	14.2	100.0	0.1	6 959	54.1	9.9	64.0	19.0	17.1	36.0	100.0	0.1
	Austria	AT_02	76 754	72.9	5.4	78.3	NA	NA	21.7	100.0	0.0	2 400	19.3	2.0	21.2	NA	NA	78.8	100.0	0.0
	Poland <sup>2</sup>																			
	Portugal <sup>2</sup>																			
	Slovenia	SI_01	17 315	83.8	2.9	86.7	4.9	8.4	13.3	100.0	0.0	622	55.2	1.9	57.1	16.8	26.1	42.9	100.0	0.3
	Slovak Republic <sup>3</sup>	SK_01	51 334	79.5	1.9	81.4	NA	NA	18.6	100.0	0.8	629	28.1	4.8	32.9	NA	NA	67.1	100.0	1.0
	Finland	FI_01	56 013	77.3	6.5	83.8	7.3	8.9	16.2	100.0	0.0	1 698	48.2	6.2	54.4	21.8	23.8	45.6	100.0	0.0
	Sweden	SE_01	97 697	75.8	7.9	83.7	8.2	8.1	16.3	100.0	0.4	2 733	39.5	4.9	44.4	29.4	26.2	55.6	100.0	1.6
	United Kingdom <sup>2</sup>																			
	Wales	UK_10	28 891	66.2	9.7	75.9	10.0	14.1	24.1	100.0	0.8	726	26.6	8.0	34.6	30.5	34.9	65.4	100.0	0.6
	Scotland	UK_06	51 480	64.5	11.8	76.3	8.8	14.9	23.7	100.0	0.0	1 431	26.6	10.6	37.2	28.2	34.6	62.8	100.0	0.3
	Northern Ireland	UK_07	21 745	61.7	11.8	73.5	14.7	11.8	26.5	100.0	0.3	654	22.2	15.4	37.6	40.4	22.0	62.4	100.0	0.0
	Norway	NO_01	55 178	77.0	8.4	85.4	4.7	9.9	14.6	100.0	0.0	2 093	49.7	9.1	58.8	13.6	27.6	41.2	100.0	0.0

ABBREVIATIONS: Vag - spon (vaginal spontaneous); Vag - instr (vaginal instrumental); CS - no lab (caesarean section - no labour/elective); CS - lab (caesarean section - during labour/emergency). <sup>1</sup> Greece and Cyprus provided no data on mode of delivery. <sup>2</sup> Hungary, Poland, Portugal and England provided no data on mode of delivery by plurality. <sup>3</sup> Czech Republic, Latvia and Slovak Republic provided data on maternal level (number of women delivering live or still births) instead of child level (number of live and still births).